PATENT ABSTRACTS OF JAPAN
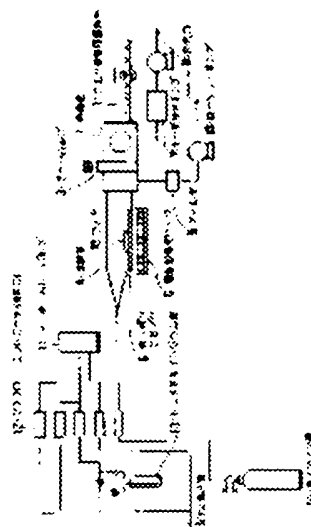
(54) CRYSTAL GROWTH METHOD OF COMPOUND SEMICONDUCTOR

(57)Abstract:
PURPOSE: To prevent the adverse influence on the growth speed, composition and uniformity of a crystal film, and control the film thickness in atomic layer order even when there occurs a change in the concentration of a material gas in vapor phase, by heating a substrate at a specified temperature and supplying alternately trimethyl indium and compound containing group V elements to the surface.
CONSTITUTION: A substrate 16 is heated so as to keep a temperature wherein trimethyl indium as original material of In is not thermally decomposed to turn into In atom in a vapor phase. By supplying alternately trimethyl indium and compound containing group V elements like phosphorus and arsenic to the surface, compound semiconductor crystal containing In is grown. For example, the wafer 16 is placed on a recessed part formed in a susceptor 5 made of carbon; the susceptor is subjected to radiation heating by a heater 6, from the rear; the wafer 16 is heated at 300–400° C; the temperature of the vapor phase in the vicinity of the wafer is kept low, thereby preventing the generation of In atom. $In(CH_3)_3$ and PH_3 are alternately supplied on the wafer 16.

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